

J. G. McDONOUGH.
LUMBER MARKER AND GRADER.
APPLICATION FILED JULY 29, 1916.

1,367,066.

Patented Feb. 1, 1921.

3 SHEETS—SHEET 1.

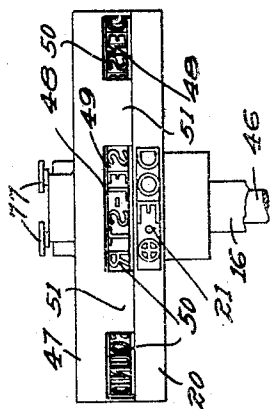


FIG. 9.

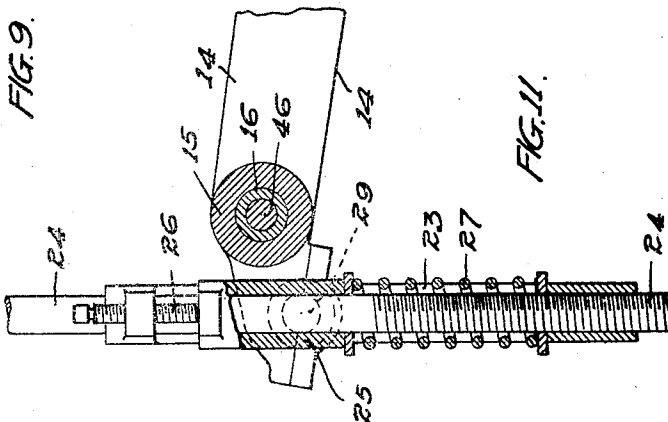


FIG. 11.

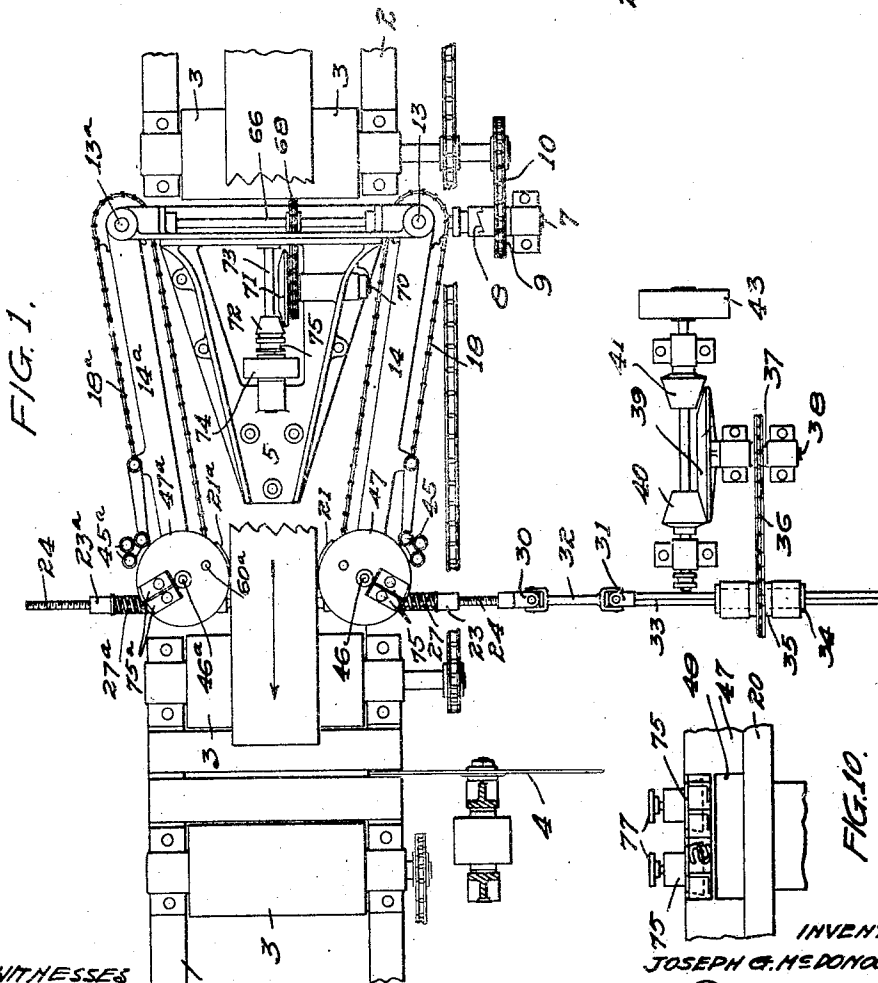


FIG. 1.

FIG. 10.

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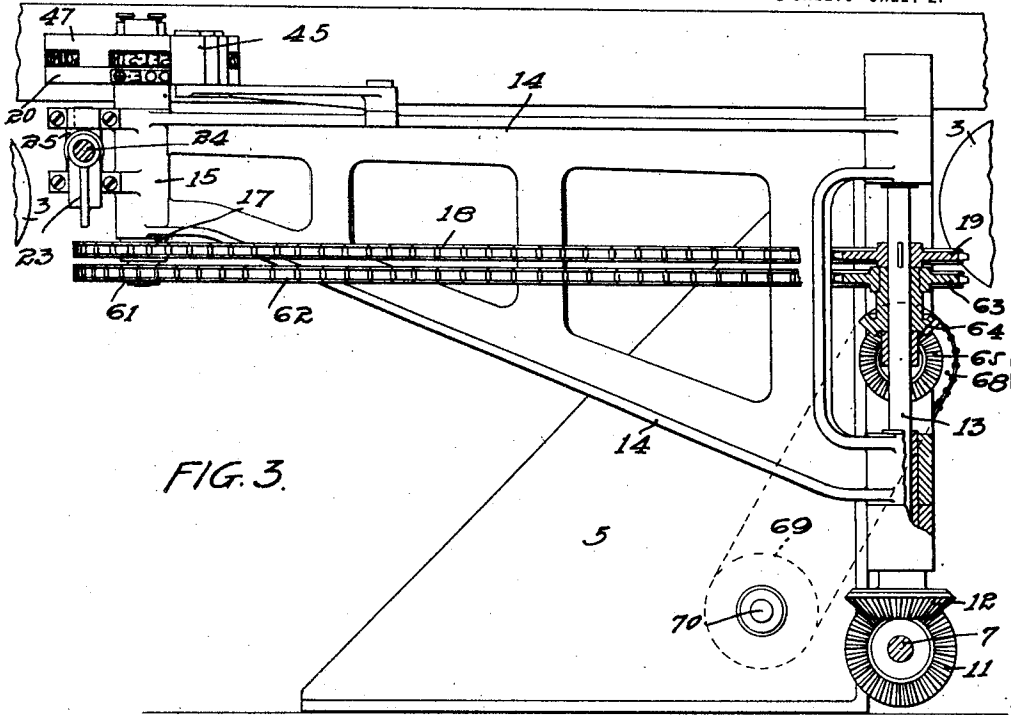


FIG. 3.

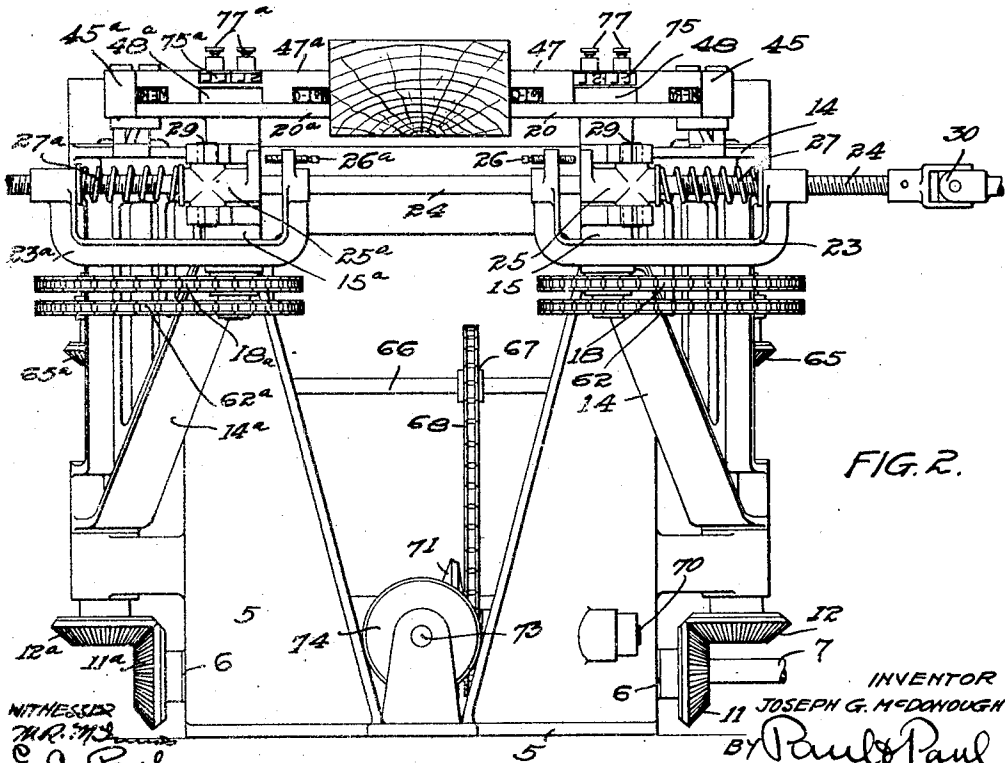


FIG. 2.

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3 SHEETS—SHEET 3.



FIG. 8.

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UNITED STATES PATENT OFFICE.

JOSEPH GILBERT McDONOUGH, OF EAU CLAIRE, WISCONSIN.

LUMBER MARKER AND GRADER.

1,367,066.

Specification of Letters Patent.

Patented Feb. 1, 1921.

Application filed July 29, 1916. Serial No. 112,142.

To all whom it may concern:

Be it known that I, JOSEPH G. McDONOUGH, a citizen of the United States, resident of Eau Claire, county of Eau Claire, State of Wisconsin, have invented certain new and useful Improvements in Lumber Markers and Graders, of which the following is a specification.

The object of my present invention is to provide a machine primarily designed for marking or branding and grading timber of varying dimensions, the brand and grade being applied at intervals on a longitudinal surface to prevent a piece of lumber or timber from being retrimmed or cross cut and sold under another trade-mark and brand than those originally applied.

A further object is to provide an apparatus which will mark and grade the lumber or mark without grading, as may be desired.

A further object is to provide a machine by means of which several surfaces of the lumber or timber can be simultaneously marked or marked and graded.

Other objects of the invention will appear from the following detailed description.

The invention consists generally in various constructions and combinations, all as hereinafter described and particularly pointed out in the claims.

In the accompanying drawings forming part of this specification,

Figure 1 is a plan view of a lumber or timber marking and grading machine embodying my invention,

Fig. 2 is a front elevation of the same,

Fig. 3 is a side elevation, partially in section, illustrating the manner of supporting the marking and grading device and showing its manner of contacting with the surface of the lumber,

Fig. 4 is a detail sectional view, showing supporting means for the disks,

Fig. 5 is a sectional view taken on line $x-x$ of Fig. 4, looking in the direction of the arrow,

Fig. 6 is a top view of the lower disk,

Fig. 7 is a bottom view of the upper disk,

Fig. 8 is a section taken on line $y-y$ of Fig. 4, looking in the direction of the arrow,

Fig. 9 is a side view of the complete marking and grading disk, showing some of the characters thereon,

Fig. 10 is a detail view of additional grading blocks mounted in the upper disk,

Fig. 11 is a detail sectional view, showing yielding means for said disks.

In the drawing, 2 represents a frame having driven rolls 3 and near one end of said frame I provide a swing cut-off saw 4. This is all of ordinary construction as used in planing or saw mills. Within reach of the saw operator I mount the marker. The frame 5 of the marker has bearings 6 for a drive shaft 7, having clutch connections at 8 with a sprocket 9 driven by a chain 10 from the sprocket on one of the driven rolls 3. A bevel gear 11 on the shaft 7 meshing with a gear 12 drives an upright shaft 13, also mounted on the frame 5. A frame 14 is pivoted on said shaft and at its further end is provided with a bearing 15 for a hollow shaft 16, said shaft being driven by means of a sprocket 17, chain 18 and a sprocket 19 on the shaft 13. The short hollow shaft 16 has at its opposite end a marking disk 20 having the same peripheral speed as the rolls 3.

The disk 20 is provided with a peripheral die 21 corresponding to the trade-mark or character that it is desired to impress or brand on the surface of the lumber or timber, and this die is positioned to make one impression on the lumber with each revolution of the disk and as the disk is approximately three feet in circumference, an impression of the mark will appear every three feet on the face of the lumber with which the die contacts.

On the opposite side of the machine I provide a similar marking disk and supports therefor, which I will designate by the same reference numeral, with the addition of the exponent "a."

In the plan view, Fig. 1, I have shown the disks 20 and 20^a bearing on the opposite faces of a piece of timber fed between them, and for holding the disks snugly against the timber I prefer to employ the following described mechanism:

23 is a yoke, supported on a threaded shaft or screw 24. 25 is a cross head, loosely mounted on said shaft and adjustable toward one end of the yoke by means of a set screw 26 mounted in a lug on said yoke and bearing against a similar lug on the cross head. A compression spring 27 is interposed between the cross head and an oppositely arranged end of said yoke. The cross head is pivoted at 29 to the swinging frame 14 and a similar mechanism is provided for

connection with the frame 14^a on the opposite side of the machine.

To adjust the yokes toward or from one another to allow for different widths of timbers to be marked, I provide the screw or shaft 24 with universal joints 30 and 31, connected with a short shaft 32 and a square shaft 33 having bearings in a sleeve 34 mounted in suitable bearings and provided with a sprocket 35 driven by a chain 36 from a sprocket 37 on a shaft 38. A large cone 39 on said shaft is driven in opposite directions by means of small cones 40 and 41 mounted on the shaft 42 and driven by a pulley 43. Shifting clutch connections 44 on the shaft 42 permit either the cone 40 or 41 to drive the large cone 39 and allow the turning of the screw in either direction for bringing the disks closer or farther apart, and the sliding shaft 33 with the universal joints will allow for any alinement of the frames 14. For instance, the left side frame may be parallel to the timber, while the opposite frame will be at an angle. The springs 27 on the screw shaft 24 will be put under tension when timber is between the disks. Inking rolls 45 distribute ink to the character 21 when contacting with same.

Thus the means for marking a trade-mark is described. I will now proceed to describe the means for marking the grade of the timbers and printing same thereon in connection with the former mark.

Within the hollow shaft 16 is a shaft 46 upon which is mounted a secondary disk 47. In openings 48 of the disk I provide blocks 49 having different grade marks. The block is preferably in the form of a letter T and has a face 50 upon which is stamped "Grade" mark. Between openings 48 are lugs 51 and the blocks 49 rest between said lugs and lugs 52 on the disk. Each block 49 has a slot 52. A compression spring 53 bears against the end of the block and a lug 54 on the upper disk 47 and its tendency is to hold the mark characters out of engagement with the timber. (See Fig. 5).

The blocks have a tooth 56 to engage an inclined edge 57 of the lug 58 on the disk 20. Whenever it is desired to use another mark the operator revolves the disk 47. The tooth on the next block 49 engages the block 58 and moves outward and drops back sufficiently to have the tooth 56 engage a tooth 59 on the block 58 and thereby the disk 47 will be driven with the disk 20. The mark on said block will come in engagement with the inking rolls and the timber as it is being driven. Said disk 47 may be advanced when the disk 20 is idle by means of a handle 60, by hand or by power through the sprocket 61 on the shaft 46, chain 62 and sprocket 63 on a hub of a gear 64 loosely mounted on the shaft 13. Said gear is in engagement with a gear 65 on the shaft 66.

A sprocket 67 has chain connections 68 with a sprocket 69 on a shaft 70. A friction disk 71 on said shaft is driven by a pinion 72 on the shaft 73, provided with a driven pulley 74. A suitable clutch 75 may be connected with said pinion on the shaft 73.

I prefer to provide one of the blocks 49 without characters, so when it is desired to print the trade-mark alone, said block will hold the lower and the upper disks in engagement so that they will revolve together.

Above said blocks I prefer to provide one or more blocks that are not so extensively used. The blocks 75 are free to slide in a groove in the disk 47 and are held either in or out of engagement with timbers by means of spring pressed pins 77 to engage either of the holes 78 or 79.

The operation of the machine is as follows:

The operator sets the disks 20 and 20^a a proper distance apart and as the timber comes in contact therewith the proper set of characters will be printed on each side of the timber and full length thereof a distance apart corresponding to the circumference of the disks.

This device may be made in various sizes and in various ways the details of construction herein shown and described may be modified and still be within the scope of my invention.

I claim as my invention:

1. The combination, with lumber or timber feeding rolls, of a die mounted to oscillate on an axis eccentric with respect to the die and bear upon a longitudinal surface of the lumber or timber to mark the same, means for positively revolving said die, and means for forcing said die toward the lumber to impress the mark therein, the revolving movement of the die during the impressing operation feeding the lumber.

2. The combination, with lumber or timber feeding means, of dies mounted to oscillate on axes eccentric with respect to the dies and bear upon longitudinal surfaces of the lumber or timber and between which dies the lumber is fed, means for positively revolving said dies and means for forcing said dies toward the lumber to impress the identifying mark therein, the revolving movement of said dies feeding the lumber during the impressing operation.

3. The combination, with lumber or timber feeding means, of dies yieldingly mounted to oscillate on axes eccentric with respect to the dies upon opposite sides of the lumber or timber to place an identifying mark upon a longitudinal surface thereof, means for positively revolving said dies, and means for forcing said dies into the lumber to impress the identifying marks therein.

4. The combination, with means for mov-

ing timber, of trade-marking devices mounted to mark longitudinal surfaces of the timber moving between them, grading devices positioned to apply grading marks to the timber, mechanism for operating said trade-marking and grading devices, said trade-marking and grading devices being adjustable to vary their points of contact with the timber, and means when the devices on one side of the timber are adjusted for imparting a corresponding movement to the devices on the opposite side of the timber.

5. The combination, with a frame and a timber moving means mounted therein, of brackets having vertical pivots at one end in said frame, dies mounted to revolve on vertical axes in said brackets to oscillate with said brackets on their pivots upon opposite sides of the timber fed between them, and means for holding said dies toward the timber to be marked with a yielding pressure.

6. The combination, with means for moving timber, of oscillating brackets, trade-marking devices carried thereby and positioned to contact with longitudinal surfaces of the timber, grading devices also positioned to contact with the timber, said grading devices and said trade-marking devices being mounted for relative adjustment for varying their points of contact with the timber.

7. The combination, with means for moving timber, of a revoluble disk having a trade-mark die thereon, a second disk concentric with said first named disk and mounted for independent movement, grading dies interposed between said disks and having a radial movement and normally inactive, and means for projecting said grading dies into contact with the lumber.

8. The combination, with means for moving timber, of disks concentrically arranged one above the other, a trade-marking die mounted in one of said disks, grading dies having a radial movement and normally inactive, and means in connection with one of said disks for projecting said grading dies into contact with the lumber.

9. The combination, with means for moving timber, of trade-marking and grading devices mounted to oscillate in horizontal planes upon opposite sides of the timber to be marked, said devices having concentric axes and mounted for relative rotary movement, and means for rendering said grading device active or inactive.

10. The combination, with a frame and lumber or timber moving means mounted therein, of a die and means for positively revolving it on a vertical axis to contact with a longitudinal surface of the timber, said die also having a movement in a curved path toward and from the surface of the lumber, a screw device mounted to force said die into

the surface of the timber, and a spring associated with said screw device for exerting a yielding pressure on said die.

11. The combination, with a frame and lumber or timber moving means mounted therein, of a pair of dies mounted to oscillate on axes eccentric with respect to the dies and revolve upon vertical axes upon opposite sides of the lumber or timber and bear on a longitudinal surface thereof, and a screw device for forcing said dies against and into the surface of the lumber or timber during their revolving movement.

12. The combination, with a frame and lumber or timber moving means mounted therein, of dies mounted to revolve upon opposite sides of the lumber or timber, a screw device mounted to force the dies into the surface of the lumber or timber and springs associated with said screw device for exerting a yielding pressure on the dies and allowing them to adjust themselves to the varying dimensions of the lumber.

13. The combination, with means for feeding lumber or timber lengthwise thereon and permitting a transverse movement of the lumber or timber, of dies mounted to oscillate on axes eccentric with respect to the dies and mark longitudinal faces of the timber and means for forcing said dies into the timber.

14. The combination, with means for moving pieces of lumber or timber lengthwise thereon and for separating the trimmed portions thereof, the pieces of lumber or timber having a transverse movement on their feeding means, and means for making a mark or impression upon a longitudinal surface of such lumber or timber.

15. The combination, with a support having means for the movement of lumber or timber of varying widths longitudinally thereover and for permitting a grading inspection thereof, of a marking device operating upon both sides of the lumber or timber and including a plurality of dies for applying an identifying mark to the different grades of lumber or timber.

16. The combination, with means for moving lumber or timber thereover and adapted for the grading inspection of said lumber or timber during its movement, of a marking device, including dies for applying identifying marks to the different grades of lumber or timber, said dies being mounted for movement of the lumber or timber horizontally between them, each die adjusting itself automatically to the surface of the lumber or timber on which the mark is to be made.

17. The combination, with means for moving pieces of lumber or timber thereover and adapted for the inspection and determination of the grades of the lumber or timber during such movement, of a container mounted to conform to the surfaces of the lumber or

timber on said moving means and a grading die mounted in said container and seated upon the surface of the lumber or timber to be marked after contact of the container therewith.

18. The combination, with a supporting means adapted for the inspection and determination of the grade of lumber or timber and the movement of the lumber or timber thereon, of a die guiding means mounted to seat a die squarely on a surface of the lumber to be marked, and a grade-branding die mounted in said guiding means to be projected against the surface of the lumber or timber.

19. The combination, with means for supporting pieces of lumber or timber thereon and adapted for the inspection and determination of the grade, of an oscillating die container, a die carrier mounted in said container, a marking die mounted in said carrier for placing a grade mark in the surface of the lumber or timber, said die being normally retracted within said container and means for projecting said carrier to engage said die with the lumber or timber.

20. The combination, with means for supporting lumber or timber and adapted for the inspection and determination of the grade of lumber or timber moving thereover, of an oscillating die container mounted to be seated against the piece of lumber or timber to be marked, a plurality of dies mounted in said container and normally in a retracted position therein, and means for projecting a die to brand into the lumber or timber when said container has been seated against the surface to be marked, and means for withdrawing the die when the mark has been made in the lumber.

21. The combination, with a means for supporting pieces of lumber or timber and adapted for the inspection and determination of the grade of the pieces moving thereover, of a container suspended for movement toward a surface of the lumber or timber and having an opening in its wall, a grade marking die mounted in said container and normally retracted therein, and means for projecting said die through said opening to engage the surface of the lumber to be marked.

22. The combination, with means for supporting pieces of lumber or timber horizontally and adapted for the inspection and determination of the grade thereof, of a rotating die suspended for a rocking lateral movement transversely with respect to the longitudinal movement of the lumber and engaging the surface thereof to mark the same, and revoluble means mounted for contact with an opposite surface of the lumber and against which means the lumber is pressed by the engagement of the marking die therewith.

23. The combination, with a means for supporting pieces of lumber or timber for movement thereon and adapted for the inspection and determination of the grade thereof, of a container and dies mounted therein for marking the surfaces of different grades of lumber or timber when said container has been positioned against the same, and means for normally holding said dies out of contact with the surfaces to be marked upon the initial engagement of said container therewith.

24. The combination, with means for supporting pieces of lumber or timber and adapted for inspection and determination of the grade thereof and movement thereon, of a die container suspended for contact with a surface of the lumber to be marked and a grading die mounted in said container for placing a grade-mark on the surface of the lumber or timber when said container is seated thereon.

25. The combination, with means for supporting pieces of lumber or timber and adapted for inspection and determination of the grade thereof while moving over said support, of a die container suspended for contact with a surface of the lumber to be marked, a grading die mounted in said container for placing a grade mark on said surface, and means for pressing said container against the surface of the lumber.

26. The combination, with means for supporting pieces of lumber or timber and adapted for inspection and determination of the grade thereof while moving over said support, of a die container suspended for contact with a surface of the lumber to be marked, a grading die mounted in said container for placing a grade mark on said surface, and means for pressing said container against the surface to be marked and projecting said grading die into said surface.

27. The combination, with means for supporting pieces of lumber or timber and adapted for inspection and determination of the grade thereof, of die containers supported upon opposite sides of the lumber or timber for contact with surfaces thereof, means for pressing said die containers into contact with the lumber, and grading dies mounted in said containers for placing grade marks in the surfaces of the lumber during the pressing movement of said containers.

28. The combination, with means for feeding lumber or timber, of dies mounted to bear upon longitudinal surfaces of the lumber or timber upon opposite sides thereof to mark the same, means for positively revolving said dies to apply their marks to the surface of the lumber, said dies being mounted to oscillate to adjust themselves to the varying widths of the lumber, means

for holding said dies toward the surface of the lumber, the engagement of said dies with the lumber operating to feed it between them as the dies are revolved.

29. The combination, with means for feeding lumber or timber, of a die mounted to bear upon a longitudinal surface of the lumber or timber to mark the same, means for positively revolving said die, means on the opposite side of the lumber opposing said die, the positive revolution of said die cooperating with said opposing means to feed the lumber between them, said die being mounted to move toward and from the lumber to adapt it for lumber of varying width, and means for holding said die in contact with the surface of the lumber.

30. The combination, with means arranged to permit inspection of and for the movement of pieces of lumber or timber thereover, of a marking device for applying an identifying means to the pieces of lumber or timber and means for aiding the feeding movement of the lumber or timber to overcome the resistance to such movement caused by the operation of the marking device on the timber, and power actuated mechanism for adjusting said marking device to compensate for the varying dimensions of the lumber or timber.

31. The combination, with means arranged to permit inspection of and the movement of pieces of lumber or timber thereon and for separating the transversely trimmed portions thereof, of means for applying an identifying mark to the lumber or timber and means for aiding the feeding movement of the timber and overcoming the resistance to such movement caused by the engagement of the marking device with the lumber or timber, and power actuated mechanism for adjusting said aiding means to compensate for the varying dimensions of the lumber or timber.

32. The combination, with a bed over which the pieces of lumber or timber of varying lengths and width move, of a marking device for applying an identifying mark to a longitudinal surface of such lumber or timber and means mounted to counteract the resistance to the feeding movement of the lumber or timber produced by the engagement of the marking device therewith, and power actuated mechanism for yieldingly adjusting said marking device to compensate for the varying dimensions of the lumber or timber.

33. The combination, with a bed on which the pieces of lumber or timber of varying lengths and widths have a longitudinal and transverse movement, of a marking device for applying an identifying mark to a longitudinal surface of such lumber or timber and move the same transversely on said bed to straighten and position it for the marking

operation, and means mounted to counteract the normal resistance to the feeding movement of the lumber or timber due to the engagement of the marking device therewith.

34. The combination, with means adapted for the lengthwise and transverse movement of lumber or timber thereon and for separating the transversely trimmed pieces of lumber or timber, of means for making a mark or impression upon a longitudinal surface of such lumber or timber, and power actuated mechanism for adjusting said marking means to compensate for varying dimensions of the lumber or timber.

35. The combination, with a bed over which the pieces of lumber or timber of varying lengths, widths and thickness move, of a marking device for applying an identifying mark to a longitudinal surface of such lumber or timber and means mounted to oppose the pressure of such marking device on the surface of the lumber and counteract the resistance to the feeding movement of the lumber arising from such pressure, and power actuated mechanism for adjusting said opposing means to compensate for varying dimensions of the lumber or timber.

36. The combination, with means for feeding lumber or timber, of a die mounted to bear upon the longitudinal surface of the lumber or timber to mark the same, means for opposing the pressure of the die on the lumber, said die being mounted for movement toward and from the lumber to adapt it for lumber of varying width, and means for holding said die in contact with the surface of the lumber, and power actuated mechanism for operating said opposing means and said die-holding means.

37. The combination, with means for moving lumber or timber thereover, and adapted for the grading inspection of said lumber or timber during its movement, of a marking device for applying an identifying mark to pieces of lumber or timber of different length, width and thickness, said marking device being mounted to exert a pressure on a longitudinal surface of such lumber or timber transversely of its feeding movement, and means also engaging a longitudinal surface of the lumber or timber for offsetting the pressure of said marking means and the consequent resistance to the feeding movement, and power actuated mechanism for yieldingly adjusting said marking devices and said pressure-offsetting means to compensate for varying dimensions of the lumber or timber.

38. The combination, with a bed having live rolls thereon for moving lumber or timber of varying length, width and thickness thereover, and adapted for the grading inspection of such lumber or timber during

its movement, of means mounted to exert a pressure on a longitudinal surface of the lumber or timber to move it transversely on said rolls and position it for the marking
5 operation, said means being arranged to adapt themselves to follow such longitudinal surfaces of the lumber or timber, one of said means applying an identifying mark

to the lumber or timber and the other means opposing the lateral pressure of the mark- 10
ing means on the lumber and one of said means aiding in the feeding movement of the lumber.

In witness whereof, I have hereunto set my hand this 20 day of July, 1916.

JOSEPH GILBERT McDONOUGH